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Kennedy 'Ex tremely Critical' With Serious Brain Injury

Outlook Is Called Ominous

By Victor Cohn

Washington Post Staff Writer

Sen. Robert F. Kennedy suffered severe brain damage, reports late yesterday indicated, and the outcome even if he lives may be extremely grave.

He remained in danger of death after undergoing brain surgery and had not regained consciousness hours afterward.

Sen. Kennedy is paralyzed to "some" unstated extent on his left side—perhaps temporarily, perhaps permanently—according to a report from a hospital source.

If he lives, one of his surgeons was quoted as saying, it is unlikely that he will be able to recover fully.

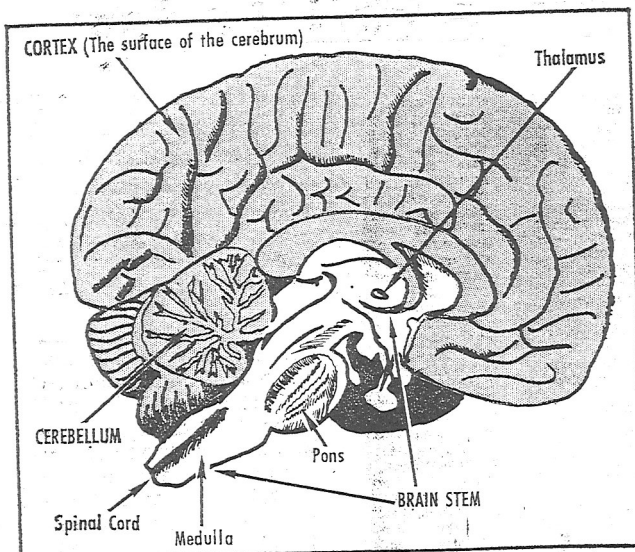
"The outcome may be extremely tragic," said Dr. J.

Lawrence Pool, professor of surgery at Columbia-Presbyterian Medical Center, New York, after a telephone conversation with Dr. Henry Cuneo, a member of the op-

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A step-by-step account of the medical treatment received by Senator Kennedy.
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The most telling of the gunman's three bullets that wounded Sen. Robert Kennedy did damage to brain stem, cerebellum and cerebrum, brain's three main parts.

Medical Reports Indicate Severe Damage to Brain

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erating team in Los Angeles.

"I'm shocked to say that it looks very ominous," Pool summed up.

This was not certain yet. At Los Angeles' Good Samaritan Hospital, Kennedy Press Secretary Frank Mankiewicz quoted doctors as saying it will be more than 36 hours before they can tell whether there will be any permanent damage.

If he survives, Pool commented, his "high intellectual powers" might well remain unimpaired. "If survival takes place, as it certainly could," Pool told WCBS-TV in New York, "it is quite likely that there would be some impairment of vision and motor control, but not necessarily any impairment of intellect or speech."

One of yesterday's earliest medical bulletins said Kennedy's "thinking process" was unaffected.

Paralysis Could Subside

Even his present paralysis could subside, said medical authorities, if damage is not too severe and if treatment succeeds.

All in all, however, Pool quoted Cuneo as telling him, "There is a slim chance of his recovery."

The Senator's condition "remains extremely critical," Mankiewicz quoted the Los Angeles medical team as saying.

"The results of a series of tests"—X-rays and EEGs (brain-wave studies)—"are inconclusive and do not show measurable improvement," he announced at 5:15 p.m. (EDT).

"His life forces—pulse, temperature, blood pressure, heart—remain good, and he continues to show the ability to breathe on his own, although his breathing re-

mains assisted by a resuscitator."

Sen. Kennedy apparently suffered severe damage from just one fragmenting .22-caliber bullet, of the three bullets that struck him.

What he suffered, according to Dr. Pool, was damage to all three principal parts of the brain:

- First, probably as the bullet entered after striking him in the mastoid bone behind the right ear, was damage to the brain stem. The brain stem is the upward extension of the spinal cord into the brain cavity. It includes the pons, medulla, midbrain and (by some definitions) the thalamus—critical areas that control breathing, heart beat and reflexes that are crucial to seeing and hearing. It is also a key relay or way point for nerve pathways leading to the brain's outer cortex, affecting thought and motion.

- Second, damage to the cerebellum, tucked behind and beneath the large cerebrum, the main part of the brain. The cerebellum controls balance, muscle tone and coordination.

- Third, damage to part of the right hemisphere or right side of the cerebrum. The cerebrum, covered by the thin gray cortex, is the brain's topmost part. Its convolutions and intricate networks of nerve cells are responsible for our higher powers of memory, use of experience and analysis. Damage to the right side could cause paralysis of the left side of the body.

The damage to the cerebrum and cerebellum may have been caused not by the bullet directly, but by blood hemorrhaging and clotting from at least one torn artery.

No detailed medical bulletins had been issued yesterday afternoon, but Pool said he understood several major brain arteries were

severed; the Senator's brain suffered extensive loss of blood and oxygen as well as several blood clots; and he suffered spinal cord injuries.

Another Grazes Head

In addition to the bullet that struck his brain, another grazed his head and another lodged in the back of his neck. These caused no great problems, Mankiewicz said.

Two severe problems must have faced Sen. Kennedy's surgeons, two Washington surgeons said yesterday.

One was controlling bleeding. "This is usually the crucial problem," said Dr. Alfred Luessenhop of Georgetown University Medical School.

"You usually operate not to remove the bullet but primarily for bleeding, especially if the bullet tears arteries and veins," said Dr. James W. Watts, chief of neurosurgery at George Washington University Medical Center.

Bleeding causes clots and swelling, and the resulting pressure on the brain affects breathing, heartbeat and brain function. It can cause unconsciousness and death.

Damage to Brain Itself

The second main problem, Watts said, is usually "the damage to the brain itself, to its arteries or veins." Severed arteries mean lack of blood and oxygen to brain cells. This, after about three minutes, means brain cell death.

Sen. Kennedy suffered both stopped or all-but-stopped heartbeat and breathing, Dr. Victor Baz at Los Angeles Receiving Hospital reported. How long these lasted, and whether brain cells may have been affected, had not been disclosed last night.



By Wally McNamee—The Washington Post

Sen. Robert F. Kennedy—a campaign study.